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BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of

The Amendment of the Commission's  
Rules to Establish New Personal  
Communications Services  
Section II - Narrow Band PCS

) GEN Docket No. 90-314  
) ET Docket No. 92-100  
)  
) RM-7140, RM-7175, RM-761  
) RM-7618, RM-7760, RM-7782  
) RM-7860, RM-7977, RM-7978  
) RM-7979, RM-7980  
)  
) PP-35 through PP-40, PP-79  
) through PP-85

ORIGINAL  
FILE

To: The Commission

NARROW BAND PCS  
(900 MHz SERVICES)

COMMENTS OF  
METROCALL OF DELAWARE, INC.  
A PRIVATELY HELD RADIO COMMON CARRIER

November 9, 1992

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To: The Commission

**COMMENTS OF METROCALL OF DELAWARE, INC.  
A PRIVATELY HELD RADIO COMMON CARRIER**

Metrocall of Delaware, Inc. (Metrocall) is a privately owned Radio Common Carrier holding licenses under Part 22 and under Part 90 of the Commission's Rules in forty (40) States. Metrocall was first licensed as a Common Carrier in 1966, and currently provides radio paging services throughout the nation. Metrocall was a partner in the initial Cellular license to the Washington/Baltimore Cellular system, one of the largest MSA's in the U.S.A. The principle owner of Metrocall, Mr. Harry L. Brock, Jr., was one of the founding partners of Cellular One of Washington. Additionally, Mr. Brock has been a key participant in cellular operations serving Norfolk, Virginia and Bakersfield, California. Metrocall and its predecessor organization, Advanced Radio Communications Company has participated extensively in land mobile two-way communications sales and service, and has been active as a licensee in Specialized Mobile Radio

(SMR). Further, the officers of Metrocall have extensive operating experience under Parts 81 and 83 of the Commission Rules and have been active participants in several developmental communications technologies as well as AM, FM and television broadcasting, MMDS, Military and Amateur Radio Communications. With over twenty eight years of experience as a licensed common carrier, and now providing service to in excess of 200,000 paging subscribers, Metrocall and its officers have standing before the Commission, and are well qualified to comment in the matter now before the Commission.

Metrocall has a thorough understanding of the Docket before the Commission in this important matter. Also, Metrocall jointly participated as an author of the Telocator comments filed on the Commission's Notice of Proposed Rule Making in this proceeding. Of great importance to our industry at large, and to the Commission, are the perspectives and observations contained in this Metrocall comment, which embodies the sometimes unique considerations of the small privately held Radio Common Carrier. These comments, while stating the concerns and recommendations of the small privately held carrier, are directed towards a fair, open "level playing field" concept for all sizes, types and classes of carriers.

It is our belief that such a policy will develop fair, simple to follow regulations and evolve a fair, competitive, robust marketplace for these services. Small privately held common carriers now operate on a national, regional and local basis, but without the benefits of being associated with large Regional Bell Operating Companies, LEC's, or publically held and traded corporations. These entities enjoy options of delayed profitability, subsidized operations, and frequently utilize public low cost debt or public equity to build facilities.

Companies such as Metrocall, who formed the original corner stones of Radio Common Carriers throughout the United States today, should be considered since it is often from these smaller organizations that creative thought leadership, and meaningful resolution of Commission issues has been found.

To facilitate our response, we shall respond to all the key points of the Proposed rules, but under two separate Sections. Section I, which addresses the wide band PCS segment 1850 - 1990 MHz. Section II, which is filed with the Commission under separate cover, addresses the narrow band PCS, Advanced Messaging Service.

With Metrocall's established standing as an affected participant by the NPRM on all Personal Communication Services, we urge the Federal Communications Commission to incorporate into it's Final Order several suggestions discussed below to assist the Commission in fully realizing its goals of providing spectrum and regulatory structure which enables system university, a high speed of deployment, a diversity of services, and competitive delivery.

### **EXECUTIVE SUMMARY**

Metrocall of Delaware (Metrocall) strongly endorses the Commission's Notice as a critical step towards realizing the national benefits of emerging PCS. In general, the NPRM properly concludes that there is a genuine and urgent need to advance this critical national agenda. Clearly, PCS will be an international market and unless domestic spectrum allocations are made in the immediate future, the U.S. is in jeopardy of loosing its leadership role as a world telecommunications marketplace.

Metrocall agrees with the Commission's definition of PCS as a family of services and the Commission's exclusion of broadcast services and fixed services (other than those ancillary to

mobile PCS) from the category. The Commission's proposed flexibility in the use of spectrum licenses for PCS is appropriate and will ultimately show to be a market driven policy that serves the best interest of the nation.

The Commission proposes spectrum allocation rules and policies for licensed and unlicensed PCS services in the 1850 - 1990 MHz band. Metrocall's comments regarding the proposal for Broadband PCS have been submitted by separate cover. The following pages address only the Narrow Band PCS comments. The Commission's proposal identifies universality, speed of deployment, diversity, and competition as primary goals and proposes a regulatory scheme based on competition and service flexibility to achieve the balance of these important national values. The Notice provides a comprehensive and well reasoned backdrop for quickly moving new PCS from the laboratory of experimentation to the national marketplace.

In order to assist the Commission, Metrocall has developed a number of basic PCS policy recommendations. Specifically, Metrocall urges the Commission to adopt Narrow Band PCS rules consistent with the following principles:

- The Commission should establish separate procedural tracts for 900 MHz Narrow Band PCS and 1850 - 1990 MHz Broadband PCS.
- The Commission must recognize that the definition of PCS service must be left flexible at this time, in order to not exclude emerging technologies being applied in this spectral area.
- The advanced PCS frequencies and the additional frequencies allocated in the NPRM for Narrow Band PCS should be dealt with as a whole and designated for advanced messaging type services.

- Specific channelization plans for this spectrum should seek to maximize entry opportunities for numerous and different AMS service providers.
- No additional spectrum needs to be allocated for PCS support systems.
- National and regional licenses for Narrow Band PCS are needed. Localized PCS licenses will result in loss of spectrum efficiency and a dilution of the national asset.
- The Commission should recognize that the nature and size of the market and the cost for deploying a Narrow Band PCS system are substantially different than those for the Broadband PCS, and that market segmentation needs to reflect these characteristics.
- Regional markets are appropriate for Narrow Band PCS and should be five in number.
- All qualified applicants should be allowed to file for PCS spectrum.
- Current cellular and telephone operating companies should be denied the opportunity to hold PCS licenses in markets where they have common operations.
- Carriers should be disallowed from holding multiple licenses, in order to enhance competition.
- Strengthened lotteries are the appropriate mechanism when combined with stringent anti-speculation safeguards for the awarding of PCS licenses.
- The Commission should employ front-end qualifiers as a method of deterring insincere applications for Narrow Band PCS authorizations and to preclude spectrum speculation.
- The Commission should impose post-licensing restrictions on the sale or transfer of authorizations, in order to reduce speculation by requiring a three-year operating period after initial operating authority has been granted.

Metrocall's comments and observations on the Narrow Band PCS portion of the Proposed Rule follow.

**I. THE COMMISSION SHOULD ESTABLISH SEPARATE PROCEDURAL TRACTS FOR 900 MHz NARROW BAND PCS AND 1850 - 1990 MHz BROADBAND PCS**

**A. 900 MHz Narrow Band PCS has no incumbent spectrum allocation and can be assigned immediately.**

Unlike the 1850 - 1990 MHz spectrum assigned to Broadband PCS, there are no incumbent users in the 900 MHz Narrow Band PCS spectrum. Therefore, placing the 900 MHz Narrow Band PCS in the same procedural tract as the Broadband will slow the implementation of Narrow Band PCS at a time when the national economy is seeking alternative mobile communication services. Understandably, the 1850 - 1990 MHz spectrum assignments will require relocation of current users, and thus the procedure must proceed carefully to ensure that incumbent as well as new users are not penalized. However, the Commission should also be sure to not unfairly penalize the new users of the 900 MHz Narrow Band PCS by unnecessarily burdening it with the procedural challenges of the Broadband PCS.

**B. The 900 MHz Narrow Band PCS can support a multitude of advanced messaging services.**

The 3 MHz of spectrum in the 900 MHz band assigned to Narrow Band PCS can support a multitude of AMS type services, making the number of providers and related issues fundamentally different than what is required for Broadband. In most cases, the Narrow Band PCS allocations are better defined, rely on existing and available technology, and can be implemented in the

marketplace almost immediately. It is in the national interest to bring these new services to market through the most expeditious path possible.

**C. 900 MHz Narrow Band PCS is not a service comparable to cellular**

The issue of new service comparability to cellular is not relevant to the 900 MHz band service discussion. That factor is much more narrowly focused on the 1850 - 1990 MHz Broadband PCS portion of the NPRM, and thus the Narrow Band PCS portion should not be burdened with the delays associated with resolving the ancillary issues of service comparability between Broadband PCS and cellular services.

**D. The NPRM envisions different rules for Broadband and Narrow Band PCS**

The Notice of Proposed Rule Making clearly envisions rules in which different terms (for example, as regards service areas, numbers of licenses, eligibility, and technical considerations) will apply to Broadband and Narrow Band PCS. In that the very nature of the services between Broadband and Narrow Band PCS are so different, it is inappropriate for these two different services to be combined into a common procedural tract.

**E. The Commission is committed to decoupling Narrow Band and Broadband PCS**

The Commission has stated its commitment to decouple Narrow Band and Broadband PCS if it appears that the deployment of 900 MHz services might be delayed as a result of them being on the same procedural tract. Clearly, the implementation of Broadband PCS will be a longer term undertaking, relying on the development and implementation of new technology. Like Broadband PCS,



Narrow Band PCS has a number of services which could easily be licensed for this area, for which the technology is now available and in some cases, in world markets. To fail to decouple Broadband and Narrow Band PCS will result in loss or delay of Narrow Band PCS opportunities for no national benefit. Metrocall urges the Commission to move swiftly to establish separate procedural tracts for 900 MHz Narrow Band PCS and 1850 - 1990 MHz Broadband PCS. Coupling Narrow Band PCS to the broader and more complicated issues which need to be resolved in Broadband PCS is a disservice to the nation and results in inefficient use of radio spectrum. We urge the Commission to move swiftly towards establishing separate procedural tracts.

## **II. THE COMMISSION SHOULD BROADLY DEFINE SERVICES WHICH MAY BE PROVIDED UNDER THE NARROW BAND PCS**

There are many visions of PCS in the market today. Metrocall embraces the Commission's definition that PCS will ultimately be a family of services, many of the members of which are not yet defined. We urge the Commission to adopt flexible regulatory frameworks, and permit a range of creative applications to be included as spectrum users in the Narrow Band PCS environment.

### **A. Paging services now combine computer capabilities with miniaturized receivers**

Today, we have a wide range of highly creative applications, many of which go beyond our current ability to alert and inform. Examples of these services include wireless RF modems resident in notebook computers, advanced alphanumeric message receivers, answer-back packet receivers, and sophisticated

packet-based data networks. Many of these applications will ultimately find a home in the Narrow Band PCS environment. Their characteristics are varied and rely on high transmission speeds using digital coding within the transmission. In some cases, the customer will have controlled access and interaction, including two-way messaging communications. Such examples also include enhanced character sets on existing alphanumeric equipment, high and low resolution graphics, electronic mail, direct to the belt or purse facsimile, digitized voice messages, and a full range of other data products.

No entity at this time, has the full vision necessary to properly define service opportunities for Narrow Band PCS, without significant risk of eliminating or otherwise penalizing yet to be defined advanced technologies, which will provide ultimate mobile communications benefit to the American public. In this regard, we ask the Commission to ensure that the definition of service not be too narrow, so that it does not unnecessarily preclude some of these yet to be defined but vitally important mobile communication services.

However, two-way real time voice communications, such as advanced cordless operations, and low earth orbit satellite (LEO) applications should be excluded from the Narrow Band PCS environment. As has been demonstrated in many industry comments in RM-7617, 930 - 931 MHz was reserved for and is ideally suited to the need for terrestrial advanced paging application. This spectrum is inadequate for advanced cordless and LEO utilization. Further, the 1850 - 1990 MHz Broadband allocation is an appropriate location for advanced

telepoint, PTS, CT2, CT3, and other real time licensed and un-licensed two-way voice communication services. Metrocall urges the Commission, to maintain a broad definition of services to be included under Narrow Band PCS, but to ensure that spectral intensive services such as two-way voice, are not permitted in the Narrow Band PCS environment since these services are adequately provided for in other portions of the Commission Rules.

**B. The Commission needs to provide a flexible regulatory framework for Narrow Band PCS**

Consistent with the approach advocated by the Commission in the Notice of Proposed Rule Making for both Broadband and Narrow Band PCS, the Commission should adopt flexibility in the use of spectrum licensed for Narrow Band PCS. A broad framework will be necessary to control interference and to promote high speed digital transmission opportunities. This flexible regulatory framework should refrain from restricting the types of services carriers are allowed to offer in these frequencies, but must be appropriately market driven to recognize the realities of new technologies being introduced and appropriately deployed in this portion of the spectrum.

Specifically, the regulatory framework should encompass the same characteristics which Metrocall presented in their comments for the 2 GHz PCS services. For reference, these comments are reproduced in this submission and endorsed in total as shown with the one exception being, that Narrow Band PCS should be licensed on regional and national basises.

### **III. LICENSING RULES AND POLICIES FOR 900 MHz PCS SERVICES MUST ENCOURAGE THE PARTICIPATION OF QUALIFIED APPLICANTS**

Licensing rules and policies developed for PCS service must encourage the participation of qualified applicants. First, the Commission should develop licensing policies that neither prefer nor discourage any qualified applicant. Second, licensed areas should be based on rational boundaries and should not severely limit entry opportunities. Third, the ten year license terms and renewal expectancies should be employed to promote license stability, which is essential to ensuring qualified entry. Finally, anti-speculation rules must be adopted to limit insincere applicants.

#### **A. The Commission should adopt a policy of not preferring or excluding any qualified applicant for 2 GHz Broadband or Narrow Band PCS, but must preclude monopolistic market behavior and encourage competition.**

Metrocall believes all qualified applicants should be permitted to pursue new PCS spectrum opportunities. However, the Commission must recognize and preclude monopolistic behavior and limiting of competition, which will occur if PCS licensees are held in common with cellular activities in the same markets. To do so results in slower development of services, fewer participants which results in higher prices to the public and fewer product features.

Since PCS will likely offer a cost effective alternative to cellular and microcellular operations, it is critical that they not be held by the same owners. The market dynamics will be forced by such operations to favor the existing cellular infrastructure, at the expense of the PCS.

In order to increase competition and service offerings, a cellular carrier should be precluded from owning a PCS service in the same markets. As has

been shown in many markets, the two-way cellular markets have not resulted in measurably lower cost cellular service.

Just as broadcasters are precluded from owning all the news media outlets of a given market, and just as an airline is precluded from owning all the transportation alternatives of a given market, existing cellular operators must be precluded from owning all the cellular/PCS alternatives of a given market.

**B. National PCS service areas and LATA based service areas are not in the public interest**

Metrocall does not believe that either nationwide licensing or licensing areas based on LATAs are consistent with the Commission's general approach to promote diversity and reliance upon marketplace realities. Metrocall joins other carriers in specific reasons for opposition to nationwide licensing and LATA based licensing as discussed below.

The Commission has solicited comment on the national PCS licensing, because granting licenses for a relatively large region may "facilitate regional and nationwide roaming; allow licensees to tailor their systems to the natural geographic dimensions of the PCS market; reduce the cost of interference coordination between PCS licenses; and to simplify the coordination of technical standards. Most importantly, the Notice states that national licensees maximize economies of scale and scope as well as the other benefits of large service areas. Finally, the Commission suggests that national licensees may be better able to compete in foreign markets.

Metrocall believes that these reported benefits are out-weighed by the offsetting severe curtailment of entry opportunities inherent in national licensing. While assignment of a single nationwide license would accomplish the establishment of a defacto technical standards for PCS, it would do it at the expense of technical experimentation and diversification. Such a strategy creates the significant potential that the industry will commit itself early to a technology which is not the optimum technology for PCS and which reduces the opportunity for marketplace experience to identify and drive PCS technology to that technology which best meets the marketplaces needs.

Metrocall also believes that achieving lower prices, service diversity, and other benefits of competition - as well as the ability of domestic industries to compete internationally - would be enhanced by increasing entry opportunities rather than by restricting them. The Commission stated in the Notice that "smaller service areas may permit a broader participation by firms of all sizes in the PCS market" this quote may produce a greater diversity in degree of technical and service innovation than would be expected by a few large firms. Metrocall does not believe that national service would serve the public interest in wide band PCS.

Metrocall also opposes a licensing scheme based on LATAs. The Commission has suggested LATAs are potential licensing areas because "this option may facilitate efficient integration of PCS into the local telephone infrastructure". As AT&T, the principle architect of the LATAs noted LATAs do not bear any relationship to markets for mobile services: "The technology,

economics, customer requirements, and competitive implications of mobile radio services are so different from those of landline services that it would be irrational and contrary to any reasonable interpretation of the decree or anti-trust policies to confine the BOCs mobile radio systems to the precise LATAs established for landline service". The Regional Bell Operating Companies have noted that landline LATAs do not reflect the different characteristics of services designed to reach the mobile communications marketplace. Consequently, basing mobile service licensing on LATAs would not be rationally related to marketplace realities.

**C. Ten year license terms for PCS are warranted**

Metrocall supports the Commission's proposed ten year licensing terms for PCS services in conjunction with a renewal expectancy in order to allow new PCS providers to establish economically viable systems. This level of licensed stability is essential to enable new entrants to justify significant investment in PCS infrastructure. More importantly, financial institutions will not be encouraged to participate in risks associated with deployment of PCS in the marketplace if licensing schemes are less than ten years, and a ten year license would be consistent with other mobile services, including cellular.

**D. The Commission should adopt stringent lottery reforms to deter speculation for PCS licenses**

The Commission is correct in focusing on lotteries, strengthened and improved by the addition of anti-speculation safeguards as the licensing method for PCS. Focusing on qualified lotteries is the best means to ensure that there is

no delay in the licensing process and will speed deployment of service to the public. Licensing problems in the cellular authorizations and other radio services have demonstrated the need to adopt regulations to limit the influx of speculative mass market produced applications by entities motivated by prospects of immediate financial gain, rather than service to the public. The experience with cellular and 220 - 222 MHz licensing has demonstrated that measures originally reviewed as strict, may not significantly affect the numbers of speculative applications filed. Metrocall recommends adopting a full spectrum of measures designed to combat speculation.

The Notice suggests several ways to limit the number of insincere applications filed for PCS authorizations. Metrocall's specific recommendations on these proposals are as follows:

- Financial qualification criteria.

Due to the relatively high cost of developing a PCS infrastructure, requiring firm financial commitments at the initial application state is critical to ensuring that applicants are in a position to achieve actual deployment of PCS. Metrocall suggests that a Bond or irrevocable Letter of Credit be posted at the time applications are filed with the Commission. The Bond would be released if the application was not successful, and would be retained if the applicant was successful.



- Construction commitments and deadlines.

In order to ensure rapid deployment of PCS services and to limit the possibility of spectrum hoarding, the Commission must mandate aggressive construction commitments and deadlines for the offering of PCS service. For example, Metrocall believes that at least 40 percent of the transmitting plant be constructed during the first year, and 95 percent by the second year. Metrocall recommends that a two year period for construction of the system be allowed, followed by a minimum of three years of operation before the license can be transferred. Failure to meet the three year commitment of operating the facility before transferring the license would null and void the license and return it to the Commission for reassignment to a new participant. Very large businesses may oppose this position as they have vast sums of capital to pay high prices, feeding the speculation which the Commission is trying to discourage. This activity raises the costs of services which the public must pay.

- Filing Fees.

In order to reduce potential speculative gain, Metrocall believes the Commission should not adopt high non-refundable filing fees.

Due to the vast and considerable media attention that has been focused on PCS, speculation problems can be expected to be worse than those experienced in cellular and 220 - 222 MHz private radio licensing. Adoption of a full compliment of anti-speculation measures is critical to

halting the influx of insincere applications. Pre-lottery settlements with disclosures prior to the lottery process should be permitted. When the cellular rules were amended to bar pre-lottery settlements among non-wireline applicants, there did not appear to be any diminution of the number of applications filed. Barring pre-lottery agreements precluded the possibility of competing applicants arriving at legitimate settlements, which would speed the licensing process and the delivery of service to the public. As a result, Metrocall believes that pre-lottery settlements for PCS licenses should be allowed, subject to disclosure rules to prevent abuse.

#### **IV THE COMMISSION SHOULD ADOPT A REGULATORY FRAMEWORK FOR PCS SERVICES THAT RELIES ON COMPETITION RATHER THAN COMPREHENSIVE REGULATION**

The Commission proposes to rely on competitive markets and regulatory flexibility to bring the family of PCS services to the marketplace. Clearly, the Commission has placed its faith in competitive markets and service flexibility as the best path to provide the greatest possible choice and lowest cost for consumers. Metrocall agrees with this approach and believes that uniform regulations to provide a competitive environment and a flexible regulatory restructure are important to realizing the benefits of PCS. However, the Commission must also recognize that through public securities market offerings, organizations are able to continue to operate in competitive markets, at less than competitive market pricing (below actual operating cost) for a sustained period of time. The ultimate tragedy in such a scenario, is that organizations which continually operate at less than actual operating cost through funds made available through public equity

offerings, ultimately fail the test of business. In this particular scenario, it is Mr. & Mrs. America who, through their participation in the public equity markets, have funded organizations in competitive markets which were not being operated for long-term profitability and sustainment of operations, but were being operated for short-term growth and gain in the public equity markets.

The Commission should be mindful that every PCS license issued with the underlying understanding that market competition rather than comprehensive regulation will ultimately sustain them; the businesses must operate not just on a cash flow positive basis, but on a net income basis in order to protect both the investments made by the American public, but also the success of the PCS technology in the marketplace.

**A. The Commission must ensure that a level playing field exists for all PCS providers**

Both the American Mobile Communications Industry and the public will be best served by adopting a uniform set of regulations that apply equally to the full family of PCS services, including both new offerings and existing services such as cellular. In particular, this uniform set of regulations should include the following attributes:

- Adoption of the Telocator flexible service concept.

The flexible service concept provides that PCS operators should be permitted to offer both common carrier and non-common carrier services over their assigned frequencies.

- Equal rights to interconnection with the Public Switch Network.

Metrocall agrees with the Notice proposal that PCS carriers, regardless of regulatory status, should have a federally protected right to interconnection with the PSTN. Metrocall further believes that new PCS carriers should have interconnection that is reasonable for the particular PCS system and "no less favorable than that offered by the LEC to any other customer or carrier".

- Flexible regulation services provided.

Metrocall believes the Commission should limit itself to licensing, enforcement, equipment certification, and the adoption of standards developed by the industry and limiting interference access services.

These policies would ensure full and fair competition for new and existing PCS service providers. If the Commission succeeds in establishing a level playing field for competitive providers of PCS, which must include a provision for true "Net Income", providers will have a strong incentive to offer attractive services and prices, because any customer will have numerous service options from which to choose.

- Further comments on regulatory status (NPR Section 94-98)

In order to provide the widest flexibility to the PCS service providers, and minimize unneeded delay to sort out the mostly artificial legal and regulatory significance of designation of a carrier as common or private, we suggest the applicant select carrier status as permitted by the

FCC in the MMDS services. Common carrier status may be significant if the PCS carrier is the only service (monopoly) in a marketplace, or is a unique type of service. Common carrier regulatory status becomes unimportant if the market is highly competitive, with many similar services, competing on an even playing field. In this case, the market will be adequately "regulated" by the marketplace. It will be an efficient and innovative marketplace. In a truly competitive marketplace common carrier status, with state oversight, tariff filings result in added cost, administrative burdens, delay, and add NO benefit to the service provider or the public. In a competitive market the public (service users) make absolutely no distinction between common or non-common carriers (eg. paging and MMDS). Experience shows the principle concerns are price and availability. Secondly, they are interested in the benefits and features of the equipment and service. True market driven commerce requires quick response to changes in price, services, and equipment offerings. Imagine having a government entity trying to process daily tariff changes, or regulate entry and offerings of an airline (since deregulation) or of a UPS or Federal Express type of business. In a truly competitive market with multiple and unrelated systems operators application of common carrier status can only delay and impair the free market functioning. Common carrier status has not even assured economic viability of carriers from each other nor from private carriers. It is clear

to Metrocall that the national communications policy in competitive (non monopolistic) services should be to work toward the elimination of the regulatory distinction of common carrier and private carrier. The carrier status confers no practical advantage, but does create confusion in regulation, giving different advantages and disadvantages to each in such a way that neither is better or worse, just different rules, licensing processes, administrative staffs, and in the end provide the same services to the public (e.g paging, MMDS), with no measurable difference in the marketplace to the user. Metrocall strongly supports the removal of all distinctions of rules and regulations of providers in competitive services, and suggests that the FCC work toward common rules for licensing, even to encouraging amendment to the Communications Act when and if needed to arrive at a common, simplified, level playing field for all providers. Along this path, the commission should keep the best features of private and common carrier licensing schemes, and eliminate the worst. This would "up average" both private and common carrier treatments under the rules, while reducing regulations and a false idea that in practice in these mass market competitive services make any real or significant end user differences.

**B. Technical standards for PCS should be left to Industry Standards Group**

Metrocall supports the Commission's tentative conclusion that the public is best served if PCS is subject to minimal technical regulation at this time.

Additionally, because PCS concepts are still being developed and many PCS technologies are at their inception. A technical framework that will permit significant flexibility in the design and implementation of PCS systems, devices and services is clearly warranted and in the public interest.

The Commission's experience in the cellular program has adequately demonstrated the strength of such an approach. More over, the PCS industry has demonstrated its ability and commitment to the timely development of technical standards necessary to the successful deployment of new PCS. At this time, Telocator and the two major U.S. standards organizations are currently working on PCS related standards -- Committee P1's Telecommunications Sub-Committee on Personal Communications Standards and the Telecommunications Industry Association's Sub-Committee TR45.4 on Microcell and PCS Standards are engaged in regular coordinating meetings to advance standards work intelligently and expeditiously resulting in industry standards. Accordingly, Metrocall believes that the Commission should limit itself to licensing, enforcement, equipment certification, and the adoption of standards developed by the industry for 2 GHz licensed PCS services. Metrocall concurs with the Commission that an FCC mandated technical advisory committee is unnecessary in light of the ability of industry groups to pursue PCS standards and evidence that this work is moving forward in the standards bodies. Narrow Band inter-operability and inter-system roaming should not be required at this time, and the industry should be permitted

to pursue such standards as PCS technology matures and the need for such services arises. However, inter-operability must be required in Broadband PCS.

Metrocall agrees with the general direction the Commission is taking in recognizing EIA/PIA Bulletin PSB10-E as the appropriate document for addressing interference protection for private operational fixed microwave systems.

However, we do not agree with the Commission's recommendation that the current level of protection provided by Bulletin PSB10-E should be standard. The Bulletin, in its current form, does not provide requirements, specifications, or guidelines for either fade margins or link reliability and availability objectives.

Finally, Metrocall believes that power and height requirements should be based upon a blanket limitation, which meets RF health hazard requirements, but allows for maximum flexibility of service requirements in the 900 MHz band. In this important area, the Commission has noted, industry standard bodies are currently examining RF radiation considerations through IEEE C.95, and should be permitted to take a lead in developing new RF exposure guidelines.

**C. Digipeaters Authorized**

Digipeater rules should be minimal and should provide a lot of flexibility. Digipeaters should be permitted anywhere within the service contour of the associated base station(s) and should not exceed the base station signal strength at the boundary of the service contour. Digipeater stations are low cost, low power (quite possibly solar powered at some sites), relatively small modular units, easily installed, or moved, and inexpensive to operate. Simply stated, the purpose



of the digipeater is to receive very weak signals originating from very low power, small size personally portable data terminals in poor transmitting locations such as inside buildings, to store and immediately repeat the transmission adding more power and retransmitting from an outdoor (more suitable antenna location) so that the data is "relayed" back to the central station to complete the data link. Digipeaters may be adjusted to permit retries of a lost or corrupted transmission by repeating it a limited number of retries until acknowledged by the receiving station as correctly received.

**D. Digipeater Technical Standards**

The antenna requirements should be similar to the Control Station rules in Part 90. We envision that most of the digipeater stations will be located in intermediate locations within a service area, having antennas located within 20 feet of existing structures, and normally not located on antenna towers, but rather on rooftops, existing poles (telephone, electric, CATV, parking lot, or gas station). Digipeaters should be constructed so that they may be "ordered to shut down" from the control center of the service area, and be further protected by internal control timing circuits which will deactivate the digipeaters transmitter in event that the transmitter fails to cease transmitting in a period slightly longer than that of the longest packet message interval used in its transmission protocol. Such control system may, at the time of such shut down, send a packet message to the control center advising of its automatic deactivation so that an alarm event may be recorded and appropriate maintenance personnel dispatched to repair or replace